توصيف برنامج بكالوريوس العلوم الطبية البيطرية

كلية الطب البيطرى – جامعة كفر الشيخ

Program Specification

Faculty of Veterinary Medicine

kafrelsheikh University

2016-2017

Approved by College Board in August 2016

Contents

PROGRAM SPECIFICATIONS

(2016)

A- Basic Information:

1- Program Title: Bachelor Degree in Veterinary Medical Sciences (BVSc).

2- Program Type: Single.

3- Faculty: Faculty of Veterinary Medicine (kafrelsheikh University).

4- Departments:

1- Department of Anatomy and Embryology.
2- Department of Cytology and Histology.
3- Department of Physiology.
4- Department of Biochemistry.
5- Department of Animal Wealth development.
6- Department of Pharmacology.
7- Department of Pathology.
8- Department of Parasitology.
9- Department of Nutrition and Clinical Nutrition.
10- Department of Bacteriology, Immunology and Mycology.
11- Department of Virology.
12- Department of Forensic Medicine.
13- Department of Food Hygiene and control.
14- Department of Clinical Pathology.
15- Department of Fish Diseases and Management.
16- Department of Animal Medicine.
17- Department of Veterinary Surgery, Anesthesiology and Radiology.
18- Department of Theriogenology.
19- Department of Hygiene and preventive Medicine.
20- Department of Poultry Diseases.

External Institutions:

1- Faculty of Science:

- Department of Physics "Biophysics".
- Department of Chemistry "General Chemistry" organic and inorganic chemistry.
- Department of Zoology "Biology".

2- Faculty of computer and information:

- Department of "Computer Science".

3- Faculty of Low (Tanta university):

- Department of Human rights.

B- Professional Information:

1- Program aims:

The aims of the program are to:

a- Provide the students with a profound cutting-edge education in the field of veterinary medicine to serve their community by solving problems and treating diseases related to veterinary medicine

b- Boast the students' knowledge and skills to be efficient and productive members in the field of veterinary medicine

c- Enhance the ability for self and continued learning via future outstanding and scientific research.

2- Attributes:

The graduate must be able to:

1.1. Show the best possible use of the professional information and skills with positive attitudes and behavior towards better wellbeing and productive efficiency of domesticated animals, poultry and fish.

1.2. Be committed to continuous improvement, and to deal with the latest standards of the profession of veterinary medicine effective and efficient performance, and gain the confidence of the community.

1.3. Practice the concepts and research techniques in various areas of Veterinary medicine

1.4. Be able to express the proper assessment ability and detection of curiosity

1.5. Think carefully about life-long learning skills

1.6. Apply international ethical and legal frame of medical practice-code

1.7. Demonstrate acceptable interpersonal and communication abilities affirming the critical role of the veterinarian in the community and raise awareness to keep the animal and human health

3- Intended Learning Outcomes (ILO's):

3/a: Knowledge and understanding:

After successful progression of the program, students will be able to:

a.1) Define terminology and methodology in chemistry and biology, recognize the basics of biophysics and biostatistics, explain the basics of genetics and recognize the basic computer science and Veterinary Terminology (English).

a.2) Express the facts the normal behaviour, breeding, management of domestic animals and laboratory animals, poultry and fish.

a.3) Memorize the principles of veterinary economics and marketing of animal products.

a.4) Describe the fundamentals of comparative and applied anatomy and embryology.

a.5) Illustrate the normal macro- and micro-structure of various body tissues, organs and systems of different animals, birds and fish

a.6) Explain the physiological and biochemical bases of different organs functions, metabolic processes and homeostasis

a.7) Establish scientific knowledge about the Principle of welfare and care of animals, wild life, poultry and fish as well as health maintenance to realize animal welfare

a.8) Be aware of basics of nutrition and feeding healthy and diseased animals, birds and fish and practices applied to them and prevention malnutrition and metabolic diseases

a.9) Identify various causes of animal diseases either bacterial, viral, fungal or parasitic, and their pathogenesis, macro/ and microscopic pathological lesions, and laboratory diagnosis

a.10) Outline the mechanisms of action of veterinary drugs, their residual time and their impact on human health. In addition, graduates should be familiar with uses, marketing and quality control of pharmaceutical preparations..

a.11) Be aware of general and specific epidemiological patterns of animal diseases and the most effective immunization protocols.

a.12) Define different problems of the toxicology and Forensic medicine, Animal medicine, infectious disease, Theriogenology and Veterinary surgery

a.13) Give different ways to examine the reproductive system of male and female animals, and different methods of pregnancy diagnosis and treatment methods of obstructed births and prevention of miscarriages and various methods of artificial insemination in different animals.

a.14) List the rules of procedure of anesthesia and radiology of different surgical operations for animals and methods for the treatment of various injuries.

a.15) Match the general characteristics of internal medicine diseases and epidemic diseases with effective ways to diagnose, treat, prevent and control them in animals, poultry and fish.

a.16) Define Veterinary laws necessary for accurate quarantine and transport of animals and birds and the method of safe disposal.

a.17) Approach the basics of public health for animals and environmental pollution including food hygiene of animal origin and emergency zoonotic diseases and modern methods for prevention.

a.18) State the basics of inspection and physical examination of food from animal origin including milk, meat and their products according to national and international food regulations

a.19) Summarize the foundations of the laws and ethics, human rights.

3/b. Intellectual skills:

After successful progression of the program, students will be able to:

b.1) Think in proper and scientific manners to identify the problems and, their causes to reach the appropriate solution for them on scientific bases.

b.2) Interpret the data to reach sound conclusions and recommendations as well as criticize and evaluate other works scientifically

b.3) Compare between different anatomical ,histological structures and physiological biochemical function in different domestic animals, birds and fish.

b.4) Relate the type and composition of ration to the types of production, species and age of animal and designing the programs to increase the production of animal, poultry and fish.

b.5) Deal with behavioral and genetic disorders of farm animals

b.6) Correlate the clinical signs of the diseases with the biochemical changes in the body.

b.7) Choose the suitable drug, calculate the therapeutic dose and plan a treatment regimen

b.8) Evaluate laboratory results for different samples of normal and diseased animal to reach accurate diagnosis.

b.9) Interpret bacteriological , parasitological as well as virological reports.

b.10) Compare between different infectious, medicinal and zoonotic diseases

b.11) Recommend the suitable anesthetic protocol and the relevant surgical intervention for diseased animal.

b.12) Develop the ideal interference for correction and treatment of infertility problems in farm animals together with choosing the ideal obstetrical maneuvers, interpret the seminal evaluation sheet.

b.13) Judge the quality of meat, egg, milk and their products and their fitness for consumption

b.14) Design the most appropriate method to manage the commercial farms of animal, poultry and fish and select the measures of the relevant biosecurity for prevention and control of infectious diseases

b.15) Recommend on the most suitable vaccination program for different farm animals, pet animals and poultry.

b.16) Consider the different environmental pollutants and suggest measures for their control.

b.17) Evaluate the different programs for the prevention of diseases and finding solutions to problems in the areas of veterinary field.

b.18) Compare the different pathological lesions and predict their sequellae and prognosis

b.19) Organize the information acquired in the basic sciences for development of career.

b.20) Create programs to increase the production of animal , poultry and fish.

b.21) Report any toxicity and forensic medicin cases.

b.22) Analyze the hygienic problems in the farms to provide suitable control measures

b.23) Identify the zoonotic diseases and the proper methods to protect human population from them

b.24) Capable of continuous learning to update and renew their biomedical senses and clinical skills

3/c. Practical and professional skills:

Upon successful completion of the program, students will be able to:

c.1) Apply skillfully the gained knowledge and understanding of different basic and clinical sciences in application for clinical practice to develop different methods of diagnosis and treatment based upon these knowledge.

c.2) Employ the comparative dissection for all systems of the different animal species, birds and fish and investigate the normal microscopic structure of different tissues.

c.3) Perform the microscopical investigations to identify different tissues among animals.

c.4) Demonstrate a practical ability to apply and analyze knowledge of biophysics, biology, organic chemistry.

c.5) Practice manipulation and restraint of farm and pet animals and poultry in a safe and humane manner for clinical examination.

c.6) Restrain the surgical patient chemically to use the available diagnostic tools (Radiology and sonar) and to perform some surgical operations in farm animals.

c.7) Report a precise case history of either individual animal or groups of animals

c.8) Apply clinical examination of healthy and diseased animal and collect relevant samples and perform pathology and lab analysis

c.9) Choose the most appropriate lab diagnosis methods

c.10) Comment perfectly on the findings of the common clinical and laboratory diagnostic procedures

c.11) Apply the most convenient therapeutic and managemental protocols for diseased animals

c.12) Write a conclusive report about the fitness of human food from animal origin for consumption and detect the biochemical residues in it.

c.13) Relate the nutritional and managmental status of animal with reference to production and reproduction competence

c.14) Formulate balanced rations to ensure increased production of animal, poultry and fish

c.15) Use the Gained new information skillfully and appropriately and remain current with the emerging biomedical knowledge and therapeutic options to enhance skills of dealing with diseased animals.

c.16) Solve clinical and managerial problems of animals, poultry and fish depending on evidence based problem solving

c.17) Operate emergency care to all animal species

c.18) Demonstrate the most appropriate and safe procedures for protection of clients and co-workers

c.19) Manipulate properly all procedures related to food hygiene, public health issues, notifiable diseases and disposal of animal wastes

c.20) Discover the risk of contamination, cross infection , zoonotic infection and predisposing factors for diseases and choose the suitable method to minimize it.

3/d: General and transferable skills:

Upon successful completion of the program, students will be able to:

d.1) Work under different laboratory and field conditions.

d.2) Work in a multi-disciplinary team work with defining roles.

d.3) Communicate effectively with the faculty members and beneficiaries and owners of cases.

d.4) Control in the ordering and determine the roles of team.

d.5) Search for information and techniques to increase the skills of self-study and the principles of continuous learning.

d.6) Use of computer in writing the reports and recording of cases and good use of the Web site in the research aspects.

4a- Academic Standards:

National Academic References Standards (NARS) is applied as a Benchmark with decision by the College Board No (9) in 17/5/2009. At the end of this program the graduate should achieve the ILOs that mentioned previously. This ILOs meet for a large distance an academic standers that mentioned by **National Authourity for Quality Assurance and Accreditaion of Education (NAQAAE)** as the following copy.

National Academic Reference Standards (NARS)

For Veterinary Higher Education in Egypt

By

National Authourity for Quality Assurance and Accreditaion of Education (NAQAAE)

1- Title: Veterinary Medical Sciences

2-Date: January 2009

3- General statement of the professional role of a graduate

1- Attributes:

The graduate must be able to:

1.1. Demonstrate the proper application of the professional knowledge and skills with positive attitudes and behavior towards better health and productivity of livestock, poultry and fish resources.

1.2. Be committed to continuous enhancement, coping with the most recent effective and efficient performance standards of the veterinary profession, and gaining community confidence.

1.3. Apply research concepts and technologies in different fields of veterinary sciences.

1.4. Express proper evaluation capacity and uncover curiosity.

1.5. Consider life-long learning skills.

1.6. Apply international ethical and legal frame of medical practice-code

1.7. Show satisfactory interpersonal and communication skills confirming the sensitive role of the veterinarian in society and disseminating the awareness of maintaining animal and human health.

2. Knowledge and understanding

Graduate of veterinary Medicine Program must acquire the following knowledge and understanding:

2.1. Basic sciences of biology, chemistry, biophysics, genetics, biostatics computer science and veterinary terminology.

2.2. Basics of normal behavior, management, breeding, veterinary economics and health maintenance of domestic animal, laboratory animals, poultry and fish.

2.3. Normal macro- and micro-structure of body tissues organs and systems of animals, birds and fish.

2.4. Physiological and biochemical bases of different organ functions, metabolic processes and homeostasis.

2.5. Principle of welfare, production and health maintenance of food producing and pet animals, sporting animals, wildlife poultry and fish.

2.6. Basics of nutrition and feeding practice of healthy and diseased animals.

2.7. Various causes of animal diseases, their pathogenesis macro and micro-scopic pathological lesion and laboratory diagnosis.

2.8. Veterinary medication uses, marketing, the impact of drug residues on human health and quality control of pharmaceutical practices.

2.9. General and specific epidemiological pattern of animal population diseases and the most effective immunization protocols.

2.10. Toxicology and forensic medicine, animal medicine, Theriogenology and veterinary surgery.

2.11. The most appropriate diagnosis and differential diagnosis of animals, poultry and fish diseases.

2.12. The accurate measurements of veterinary quarantine.

2.13. Public health, including food hygiene of animal origin and zoonotic diseases that are transmitted from animals to human.

2.14. Basics of law and ethical cods relevant to animals and food hygiene.

2.15. Basics of social sciences, communication and human rights.

3. Practical and Professional skills

Graduate must attain the capacity to:

3.1. Employ all the gained knowledge and understanding in clinical practice in a skillful pattern.

3.2. Safely, correctly and humanely restrain animals for examination.

3.3. Obtain the history of the case whether it is of an individual animal or a group of animals.

3.4. Perform clinical examination of diseased cases and collect relevant samples.

3.5. Appropriately select and interpret findings of the common clinical and laboratory diagnostic procedures to reach and adopt the most convenient therapeutic and ménage mental approach.

3.6. Write a report about hygiene and safety of food of animal origin for human consumption.

3.7. Assess and advise about animal management, nutrition under conditions of health and disease and reproductive efficiency.

3.8. Skillfully and appropriately gain and use new information remain current with the emerging biomedical knowledge and therapeutic options.

3.9. Conduct evidence-based problem –solving of field presented problems tasks.

3.10. Provide emergency care to all species of animals.

3.11. Utilize appropriate safety procedures to protect clients and co-workers.

3.12. Correctly deal with procedures related to food hygiene, public health issues, notifiable disease and disposal of animal wastes.

3.13. Minimize the risk of contamination, cross infection and predisposing factors of diseases.

4- Intellectual skills

Graduate must have the ability to:

4.1. Foster critical thinking and scientific curiosity.

4.2. Assess and criticize, at the fundamental level, how data are derived.

4.3. Inculcate a rigorous approach to problem identification and solving.

4.4. Proficiently secure diagnostic reasoning, develop problem lists and differential diagnosis in order to deductively and critically reach the most appropriate solution (s) and management of the addressed clinical problems.

4.5. Remain committed to life-long learning and updating /upgrading their biochemical sense and clinical skills.

5-General and Transferable Skills

Graduate must have the ability to:

5.1. Work under pressure and /or contradictory conditions.

5.2. Function in a multidisciplinary team.

5.3. Communicate appropriately verbally and non- verbally.

5.4. Organize and control tasks and resources.

5.5. Search for new information and technology as well as adopt life-long self learning ethics.

5.6. Utilize computer and internet skills.

4b. Comparison of previous to external references:

Matching of academic standards between Faculty program ILOs and National Academic Reference Standards (NARS).

NARS	Faculty program Attributes
1	1.1
2	1.2
3	1.3
4	1.4
5	1.5
6	1.6
7	1.7
NARS	**Faculty program ILOs**
Knowledge and Understanding	
1	a1
2	a2, a3
3	a4, a5
4	a6
5	a7
6	a8
7	a9
8	a10
9	a11
10	a12, a13,a14
11	a15
12	a16
13	a17
14	a18
15	a19

NARS	Faculty program ILOs
Intellectual skills	
1	b1, b2, b3, b5, b13 ,b20 , b24
2	b2, b5, b6, b7, b8, b21
3	b4, b7, b8, b9, b11, b12, b14, b15, b16, b17
4	b10, b11, b12, b18, b22, b23
5	b19, b24
Professional and practical skills	
1	c1, c2, c3, c4
2	c5,c6
3	c7
4	c8
5	c9, c10, c11
6	c12
7	c13 ,c14
8	c15
9	c16
10	c17
11	c18
12	c19
13	c20
General and Transferable skills	
1	d1
2	d2
3	d3
4	d4
5	d5
6	d6

5- Curriculum Structure and Contents:

a- Duration of the programme: 5 years.

b- Programme Structure:

- Number of hours per year:

Lectures:	**2460**h	Practical:	**1980**h	Total**:**	**4440**h

1st year:	Lectures:	480	Practical	360	Total	840
2nd year	Lectures:	450	Practical	360	Total	810
3rd year	Lectures:	480	Practical	330	Total	810
4th year	Lectures:	480	Practical	480	Total	960
5th year	Lectures:	570	Practical	450	Total	1020

❖ **Basic sciences**	**1410h**	**31.76%**
❖ **Pre-Clinical veterinary sciences**	**885 h**	**19.93%**
❖ **Clinical veterinary sciences**	**1980 h**	**44. 6%**
❖ **Human rights, economics& Language courses**	**120 h**	**2.7 %**
❖ **Computer sciences**	**45 h**	**1.01 %**

❖ **Summer Training:**

2nd year :	8h daily for 2 months	Total 416 h
3rd year :	8h daily for 2 months	Total 416 h
4th year :	8h daily for 2 months	Total 416 h
Total hours	**1248 h for 6 months**	

c- Program levels: not applaied

d- Program Courses:

FIRST YEAR

A- First Semester

Course Title	Curriculum (number of hours)			
	Lecture/ week	Lab/ week	Total/ week	Total/ semester
A- First Semester				
Anatomy and Embryology (A)	3	2	5	75
Cytology and general Histology	2	2	4	60
General physiology (A)	2	2	4	60
Organic and Inorganic Chemistry	2	2	4	60
Biology (Zoology and Botany)	2	2	4	60
Biophysics	1	2	3	45
Veterinary Medical Terminology	2	-	2	30
Human rights	2	-	2	30
Total	**16**	**12**	**28**	**420**
B- Second Semester				
Anatomy and Embryology (B)	3	2	5	75
Special Histology (A)	2	2	4	60
General physiology (B)	2	2	4	60
Biochemistry (A)	3	2	5	75
Veterinery Genetics and Genetic Engineering	3	2	5	75
Computer	1	2	3	45
Biostatistics	2	-	2	30
Total	**16**	**12**	**28**	**420**

SECOND YEAR

A- First Semester

Course Title	Curriculum (number of hours)			
	Lecture/ week	Lab/ week	Total/ week	Total/ semester
A- First Semester				
Comparative and applied Anatomy (A)	3	2	5	75
Special physiology of animal, poultry and fish (A)	2	2	4	60
biochemistry (B)	3	2	5	75
Special Histology (B)	2	2	4	60
Animal, poultry and fish Breeding and Production(A)	3	2	5	75
Animal and Poultry Behavior and Management (A)	3	2	5	75
Total	**16**	**12**	**28**	**420**
B- Second Semester				
Comparative and applied Anatomy (B)	3	2	5	75
Special physiology of animal, poultry and fish (B)	2	2	4	60
biochemistry (C)	2	2	4	60
Veterinary economy and farm management	2	2	4	60
Animal, poultry and fish Breeding and Production(B)	2	2	4	60
Animal and Poultry Behavior and Management (B)	3	2	5	75
Total	**14**	**12**	**26**	**390**

THIRD YEAR

Course Title	Curriculum (number of hours)			
	Lecture/ week	Lab/ week	Total/ week	Total/ semester
A- First Semester				
General Pathology (A)	3	2	5	75
General Parasitology	3	2	5	75
Nutrition & Clinical Nutrition (A)	3	2	5	75
Veterinary Pharmacology (A)	3	2	5	75
Bacteriology, Mycology and Immunology (A)	2	2	4	60
Virology(A)	2	1	3	45
Total	**16**	**11**	**27**	**405**
B- Second Semester				
General Pathology (B)	3	2	5	75
Special Parasitology	3	2	5	75
Nutrition & Clinical Nutrition (B)	3	2	5	75
Veterinary Pharmacology (B)	3	2	5	75
Bacteriology, Mycology and Immunology (B)	2	2	4	60
Virology (B)	2	1	3	45
Total	**16**	**11**	**27**	**405**

FOURTH YEAR

Course Title	Curriculum (number of hours)			
	Lecture/ week	Lab/ week	Total/ week	Total/ semester
A- First Semester				
Special Pathology and Morbid Anatomy (A)	2	2	4	60
Internal Medicine (A)	2	2	4	60
General Surgery, Anaesthesiology and Radiology (A)	2	2	4	60
Reproduction(A)	2	2	4	60
Forensic Medicin, Toxicology and Veterinary Regulations (A)	2	2	4	60
Milk, Egg and their products Hygiene and , Fat and Oil (A)	3	2	5	75
Clinical pathology (A)	1	2	3	45
Fish and Aqua Culture diseases, and management (A)	2	2	4	60
Total	**16**	**16**	**32**	**480**
B- Second Semester				
Special Pathology and Morbid Anatomy (B)	2	2	4	60
Internal Medicine (B)	2	2	4	60
General Surgery, Anaesthesiology and Radiology (B)	2	2	4	60
Reproduction (B)	2	2	4	60
Forensic Medicin, Toxicology and Veterinary Regulations (B)	2	2	4	60
Milk, Egg and their products Hygiene and , Fat and Oil e (B)	3	2	5	75
Clinical pathology (B)	1	2	3	45
Fish and Aqua Culture diseases, and management(B)	2	2	4	60
Total	**16**	**16**	**32**	**480**

FIFTH YEAR

Course Title	Curriculum (number of hours)			
	Lecture/ week	Lab/ week	Total/ week	Total/ semester
A- First Semester				
Animal, poultry & Environment Hygiene (A)	3	2	5	75
Internal Medicine (C)	2	2	4	60
Special Surgery and Lameness (A)	2	2	4	60
Obstetrics (A)	2	2	4	60
Veterinary Infectious Diseases (A)	3	2	5	75
Poultry and rabbit diseases(A)	2	2	4	60
Meat hygiene (A)	3	2	5	75
Zoonoses (A)	2	1	3	45
Total	**19**	**15**	**34**	**510**
B- Second Semester				
Animal, poultry & Environmental Hygiene (B)	3	2	5	75
Internal Medicine (D)	2	2	4	60
Special Surgery and Lameness (B)	2	2	4	60
Artificial Insemination and Embryo Transfer	2	2	4	60
Veterinary Infectious Diseases (B)	3	2	5	75
Poultry and rabbit diseases(B)	2	2	4	60
Meat, and meat by products hygiene (B)	3	2	5	75
Zoonoses (B)	2	1	3	45
Total	**19**	**15**	**34**	**510**

Summer Training:

According to a definite syllabus, the students have to spend a period of six months for training in terms of 8 hours/ day. The training is divided into three main parts each part consists of eight weeks in the summer between the second and third, third and fourth, fourth and fifth years, respectively.

This training includes visits to the veterinary clinics, governmental research institutes, abattoirs, feed mills and commercial projects of animal and poultry production in addition to fisheries. The students will also be learned, during this training period, the field applications of biostatistics and computer skills.

The training is under the supervision of the staff members and their assistants; the faculty council determines the number of groups and arranges the schedule and programme of training every year.

Students should have a satisfactory grade to be able to graduate.

6- Courses contents:

First year

First Semester	Second Semester
Anatomy and Embryology (A): • General anatomy (osteology, syndesmology, myology). • Special anatomy (birds and fish).	**Anatomy and Embryology (B):** • General embryology (gametogenesis, fertilization, cleavage, gastrulation, fetal membranes, placentation). • Special embryology of body systems (digestive, respiratory, cardiovascular, urogenital, nervous, endocrine).
Cytology and general Histology: • Histological technique. • Cytology. • Epithelial tissue. • Connective tissue. • Cartilage and bone. • Muscular tissue.	**Special Histology (A):** • Blood and bone marrow. • Lymphatic system. • Nervous tissue and Nervous system. • Cardiovascular system. • Respiratory system. • Urinary system.

General physiology (A): • Cell physiology • Physiology of muscle &nerve • Physiology of nervous system • Autonomic nervous system • Physiology of sense organs • Physiology of thermoregulation	**General physiology (B):** • Physiology of urinary system • Physiology of respiratory system • Physiology of blood
Organic & Inorganic Chemistry: A) Organic Chemistry: Alkenes and Alkynes, Alcohols Ethers and Epoxides, Aldehydes and Ketones, Carboxylic acids and their derivatives, Amines compounds and phenols. **B)** Physical Chemistry: Gaseous, Liquid and Solid state, Thermochemistry, equilibrium, Solutions**.**	**Biochemistry (A)** • Carbohydrates. • Lipids. • Proteins. • Nucleoproteins and nucleic acids. • Enzymes and coenzymes. • Vitamins
Biology (Zoology and Botany): A) **B**otany: Plant Structure and Physiology, Osmosis and Systematic Botany. **B)** Zoology: Taxonomy of animal kingdom with example, fish biology.	**Veterinary Genetics and Genetic Engineering:** **Part I: Cytogenetics:** • **Chromosome and cell cycle** • **Heterochromatin and Euchromatin.** • **Sex determination** **Part II: Molecular Genetics:** • **DNA replication** • **The genetic code** • **Genetic expression** • **Transcription and Translation.** • **Regulation of protein synthesis** **Part III: Mutation** • **The genetic manipulation and genetic engineering** **Part IV: Immunogenetics:** • **Genetic resistance and pathogens** • **Control of inherited disorders and diseases**

Biophysics: • Electromagnetic radiation • X- rays • Thermionic emission and X- rays tubes • Interaction of X- rays • Fluoroscopy • X- rays and rays measurement • Ultrasound production and interactions • Radiology • Biological instruments.	**Computer:** • Computer components. • Computer Programming. • Computer molecules program. • Computer Network. • Computer Topology. • Practical program.
Veterinary Medical Terminology: • Veterinary medicine abbreviations and Specializations. • Medical adjectives, prefixes, and Suffixes. • Latin expressions, Punctuation marks, Singular and Plural, Pronouns. • British and American Spelling, Greek Alphabetical. • Capital letters and count and non count nouns, Writing a thesis and paper.	**Biostatistics:** **Description of the data:** A- Pictorial Description (Frequency distribution tables, histograms, polygons; curves). B- Quantitative Description. (i)- Central tendency (A. mean, G. mean, W. mean, median, mode, IQR, and Box plot). (ii)- Dispersive measurement(Variance, SD, SE, and CV %). - Binomial distribution - Normal distribution - Testing hypothesis Analysis of categorical data: • Chi-squared tests • Quantifying risk; disease prevalence. • Experimental design. • Analysis of Variance. • Analysis of regression and correlation
Human Rights: • حقوق الإنسان في الدستور المصري. • حقوق الإنسان في الشريعة الإسلامية. • حقوق الإنسان في قانون العمل وقانون التأمين الإجتماعي. • الملكية الفكرية في حقوق الإنسان.	

Second year

First Semester	Second Semester
Comparative and Applied anatomy (A): • Digestive system of domestic animals. • Respiratory system of domestic animals. • Urogenital system of domestic animals.	**Comparative and Applied anatomy (B)** • Neuronatomy of domestic animals. • Cardiovascular system of domestic animals.
Special Physiology of Animal, Poultry and Fish (A): • Physiology of Endocrine system. • Physiology of Digestive system. • Physiology of Cardiovascular system	**Special Physiology of Animal, Poultry and Fish (B):** • Physiology of Female Reproductive system. • Physiology of Male Reproductive system. • Poultry physiology. • Fish physiology.
Biochemistry (B): • Animal pigments. • Biological Oxidations. • Carbohydrate Metabolism. • Lipid Metabolism. • Hormones.	**Biochemistry (C)** • General Protein Metabolism. • Amino acids Metabolism. • The urine. • Mineral Metabolism. • Blood. • Putrefaction and detoxication.
Special histology (B): • Skin, mammary gland, sense organs, Digestive system, Male genital system, Female genital system and Endocrine system.	**Veterinary Economy and farm management:** • Introduction about veterinary economics. • Pricing • Elasticity measures • The business of veterinary practice • Management in veterinary setting • Veterinary marketing • Production function theory • Costs of production • Economic and productive efficiency of animal production farms • Methods used for assessing the economic benefits of disease control • Basis of feasibility studies of animal production projects • Farm records and accounts • Depreciation • Budgeting • Position of animal farms and their requirements • Comparison between the economic traits of farm animals

Animal, Poultry and Fish breeding and Production (A):	Animal, Poultry and Fish Breeding and Production (B)
• Traits, phenotypes, Genotypes and Genes in populations. • Quantitative and qualitative Traits. • Gene and genotype frequencies. • Mating systems. • Mating strategies based on animal performance (phenotype): assortative mating. • Mating strategies based on pedigree: inbreeding and out breeding. • Genetic parameters. • Selection • Advanced Animal, Poultry and Fish breeding. • Biotechnology in animal breeding. • Breeding for disease resistance and immune responsiveness.	Part I: POULTRY PRODUCTION: • Poultry House Environments and design. • Artificial Incubation and Hatchability. • Brooder and Growing Management. • Laying Management and Breeder Management. • Management of Broilers. Part II: ANIMAL PRODUCTION: • Reproductive performance of dairy cattle. • Classes and breeds of animals. • Milking. • Managing the dry cow. • Selecting dairy sires and dairy cattle. • Principles and practices of sheep and goat production. Part III: FISH PRODUCTION: • Guidelines for Site selection for aquaculture. • Selection of species and Culture Systems. • Biological characteristics of fish species. • Water quality criteria and management. • Principals of pond fertilization. • Control of low dissolved oxygen contents. • Control of high ammonia contents & clay turbidity. • Aquatic weed control. • Fish hatcheries.
Animal and Poultry Behavior and Management (A):	**Animal and Poultry Behavior and Management (B):**
• General introduction of ethology • Cattle behavior and management • Buffalo behavior and management • Sheep behavior and management • Goat behavior and management • Camel behavior and management • Animal transportation • Animal destroying • Animal vices	• Poultry behavior and management • Duck behavior and Geese behavior and management • Turkey and ostrich behavior and management • Quail and pigeon behavior and management • Dog and cat behavior and management • Rabbits behavior and management • Lab animal behavior and management • Fish behavior • Poultry vices and abnormal behavior • Wild animals behavior and management

Third year

First Semester	Second Semester
General Pathology (A): • Histopathological Technique. • Disturbances in Circulation. • Disturbances in Cell Metabolism. • Necrosis and gangrene.	**General Pathology (B):** • Disturbances in Cell Growth. • Oncology. • Inflammation and Healing.
General Parasitology • Introduction into Parasitology. • Habitat, Morphology, Life cycle, Diagnosis Control and Medical importance of: 1- Trematodes. 2- Cestodes. 3- Nematodes. Helminthological techniques.	**Special Parasitology:** • Introduction into Arthropods. • Entomology • Habitat, Morphology, Life cycle, Diagnosis Control and Medical importance of: 1- Arthropods 2- Protozoa • Diagnostic techniques of Arthropods and protozoa. • Immunity to Parasites. • Fish Parasites.
Nutrition and Clinical Nutrition (A): • Technical terms • Water nutrition • Carbohydrate nutrition • Protein nutrition • Lipid nutrition • Nutritional problems • Vitamins • Minerals • Evaluation of feedstuffs • Feedstuffs	**Nutrition and Clinical Nutrition (B)** • Feeding standards for maintenance, growth and lactation. • Requirements for reproduction, lactation, wool and growth • Dairy Nutrition • Beef Nutrition • Sheep and goat nutrition • Fish nutrition • Poultry and rabbit nutrition • Pet animal nutrition • Ration formulation for different animal species. • Feed processing and storage
Veterinary Pharmacology (A) 1- Introduction and general pharmacology. 2- Drugs affecting on autonomic nervous system,autacoids and anti-inflammatory drugs. 3- Drugs affecting on central nervous system and general anaesthesia. 4- Drugs affecting on cardiovascular system.	**Veterinary Pharmacology (B):** 1- Pharmacology of systems: ▪ Drugs affecting on Respiratory system ▪ Drugs affecting on Reproductive system ▪ Drugs affecting on Urinary system ▪ Drugs affecting on Digestive system ▪ Drugs affecting on eye and skin 2- Drugs affecting metabolism and growth promoting agents. 3- Chemotherapy: ▪ Antimicrobials ▪ Anthelmintics

	▪ Antiprotozoal drugs ▪ Antiviral drugs ▪ Antifungal drugs ▪ Insecticides ▪ Antiseptics and disinfectants 4- Drug toxicology: ▪ General drug toxicology ▪ Special drug toxicology **5-** Clinical pharmacology and miscellaneous drug studies.
Bacteriology, Mycology and Immunology (A) I- Bacteriology: • General bacteriology: ▪ Morphology ▪ Growth ▪ Bacterial genetics II- Mycology: • General Mycology: ▪ Morphology ▪ Growth and reproduction ▪ Mycotoxins III- Immunology: • Structure of Immune system • Innate immune response • Acquired immune response • Antigen, antibodies and complement system • Hypersensitivity	**Bacteriology, Mycology and Immunology (B):** Systematic Bacteriology: • Gram positive bacteria • Gram negative bacteria Systematic mycology: • Moulds • Yeasts • Dimorphic fungi ▪ *Sporothrix schenkii* ▪ *Blastomycetes dermatitis* ▪ *Histoplasma farciminosum* ▪ *Coccidiodes immitis*
Virology (A): **1-** Fundamental characters of viruses. **2-** General properties of viruses: **3-** Viral haemagglutination. **4-** Virus – Cell relationships. **5-** Pathogenesis of viral infections. **6-** Interference phenomenon. **7-** Viral vaccines: ▪ Live viral vaccines ▪ Inactivated vaccines **8-** Antiviral drugs.	**Virology (B):** A- Classification of viruses: B- Riboviruses (RNA-viruses): ▪ Orthomyxoviridae ▪ Paramyxoviridae ▪ Coronaviridae ▪ Picornaviridae ▪ Birnaviridae ▪ Reoviridae ▪ Rhabdoviridae ▪ Bunyaviridae ▪ Retroviridae ▪ Flaviviridae ▪ Caliciviridae C- Deoxyriboviruses (DNA-viruses): ▪ Poxviridae ▪ Herpesviridae ▪ Adenoviridae ▪ Circoviridae

Fourth year

First Semester	Second Semester
Special Pathology and Morbid Anatomy (A): • Pathology of: ▪ Cardiovascular System ▪ Respiratory System ▪ Digestive System ▪ Urinary System ▪ Nervous System ▪ Reproductive System	**Special Pathology and Morbid Anatomy (B):** • Pathology of: ▪ Viral Diseases ▪ Bacterial Diseases ▪ Parasitic Diseases ▪ Mycotic Diseases
Internal Medicine (A) ▪ General systemic state ▪ Diseases of Urinary system ▪ Diseases of respiratory system	**Internal Medicine (B)** ▪ Diseases of upper digestive tract ▪ Digestive diseases of compound stomach (Ruminants) ▪ Digestive diseases of equine and hepatobillary diseases
General surgery, Anesthesiology & Radiology (A) Veterinary Anaesthesia • Pre-anaesthetic medications • Types of anaesthesia I-Local anaesthesia (analgesia) II-Regional anaesthesia (analgesia) *1- Perineural analgesia (nerve block):* a- Perineural analgesia of head nerves. b- Perineural analgesia of limb nerves c- Perineural analgesia of the trunk *2-Spinal analgesia:* a- Epidural analgesia b- Subarachnoid analgesia *3- I/V regional analgesia* III-General anaesthesia *1-Injectable General anaesthesia* *2-Inhalation General anaesthesia* • Anaesthetic emergencies and accidents.	**General surgery, Anesthesiology & Radiology (B)** • Inflammation • Suppuration and abscesses formation • Phlegmone (Cellulitis) • Sinus and Fistula • Ulcer • Necrosis and Gangrene • Haemorrhage and Haemostasis • Wounds and Thermal injuries • Affections of Bone • Affections of Joints • Affections of tendons and ligaments • Affections of bursae • Affections of muscles • Affections of lymphatic system • Cysts • tumors

• Diagnostic imaging. • Principles of X-ray and Ultrasonography.	• Hernias • Surgical disorders of the body (regions) • Affections of the head, neck and chest ▪ Affections of the Abdomen ▪ Affections of the perineum ▪ Affections of the tail
Reproduction (A): ▪ Age of puberty and follicular waves. ▪ Estrous detection. ▪ Clinical application of reproductive hormones. ▪ Using of ultrasonography in reproductive system examination. ▪ Estrous synchronization in farm animals ▪ Ovulation synchronization in cattle. ▪ Diseases causing abortion in farm animals	**Reproduction (B):** ▪ Congenital causes of infertility in animals. ▪ Hormonal causes of infertility in animals. ▪ Environmental causes of infertility in animals. ▪ Repeat breeders. ▪ Pregnancy diagnosis in animals. ▪ Causes of infertility in male. ▪ Sire selection.
Forensic Medicine, Toxicology and Veterinary Regulations(A) ▪ Identification ▪ Death ▪ Wounds ▪ Thermal injuries ▪ Asphyxia ▪ Abortion and infanticide ▪ Medical rules and ethics	**Forensic Medicine, Toxicology and Veterinary Regulations(B)** ▪ Basic of general toxicology ▪ Corrosives ▪ Metallic poisons ▪ Pesticides ▪ Animal poisoning ▪ Volatile gases poisoning ▪ Mycotoxicosis ▪ Poisonous plants ▪ Irradiation
Milk, Eggs and their products Hygiene and Fat and Oils (A): ▪ Sampling and physical properties of milk ▪ Milk composition and its chemical analysis ▪ Sources of contamination of milk ▪ Factors affecting microbial growth ▪ Spoilage organisms	**Milk, Eggs and their products Hygiene and Fat and Oils (B)** ▪ Food poisoning ▪ Heat treatment of milk ▪ Food processing technologies ▪ Dairy products ▪ Edible fats and oils ▪ Eggs

▪ Keeping quality tests of milk ▪ Clean milk production ▪ Pathogens in milk ▪ Residues and contaminants	▪ Diseases transmitted through milk ▪ Mastitis and milk quality ▪ HACCP system in dairy plants
Clinical Pathology (A): ▪ General principles of Hematology ▪ Ineffective and effective hematopoiesis ▪ Erythrocyte disorders and abnormal morphology & inclusion bodies . ▪ Evaluation of erythrocytes ▪ Anemia ▪ Polycythemia ▪ Abnormal hemoglobin content ▪ Evaluation of leukocytes ▪ Interpretation of leukogram ▪ Abnormalities of thrombocytes & Hemostatic disorders ▪ Hematopoietic neoplasia ▪ Field cases	**Clinical Pathology (B)** ▪ General principles of clinical chemistry ▪ Abnormalities of water and electrolytes balance ▪ Abnormalities of Acid base balance ▪ Abnormal Lipids, carbohydrates and proteins metabolism ▪ Exofoliative cytology ▪ Disorder of Liver and muscle function ▪ Abnormal Renal function and urinalysis ▪ Gastroentrology (disorders of GIT& pancreas) ▪ Immunodiagnostics and other emerging diagnostic technology ▪ Diagnostic molecular clinical pathology ▪ Clinical cases
Fish and Aquaculture Diseases and Management (A) ▪ Bacterial diseases of fish. ▪ Parasitic diseases of fish. ▪ Viral diseases of fish. ▪ Commercial farm-food fish. ▪ General ichthyology and fish biology. ▪ Technical terms of aquaculture. ▪ Fish farm construction. ▪ Hydrobiology and chemistry of aquaculture ▪ Laboratory diagnosis of fish diseases. ▪ Internal anatomy and external features of fish. ▪ Fish tansportaion & specimens dispatch.Nutritional diseases of fish.	**Fish and Aquaculture Diseases and Management (B)** ▪ Fish aquaculture. ▪ Hematological examination of fish blood. ▪ Mycotic diseases of fish. ▪ Immunity and stress in fish. ▪ Nutritional diseases of fish. ▪ Water pollutants and toxicants. ▪ Crustacean diseases. ▪ Prophylaxis, control & treatment diseases of fish. ▪ Fish hatching. ▪ Diseases of marine fish.

Fifth year

First Semester	Second Semester
Animal, Poultry and Environment Hygiene (A): ▪ Stress ▪ Air pollution ▪ Water pollution ▪ Epidemiology	**Animal, Poultry and Environment Hygiene (B):** ▪ Animal and poultry housing ▪ Animal wastes management ▪ Combating of infectious diseases ▪ Disinfection
Internal Medicine (C): ▪ Diseases of cardiovascular system, blood and blood forming organs. ▪ Diseases of the skin. ▪ Diseases of musculoskeletal system. ▪ Diseases of the nervous system	**Internal Medicine (D):** ▪ Diseases of neonates. ▪ Nutritional deficiency diseases. ▪ Diseases of metabolic disorders ▪ Principles of Ultrasound
Special Surgery & Lameness (A): ▪ Ophthalmology ▪ Surgical affections of the ear ▪ Surgical affections of the horn ▪ Surgical affections of respiratory system ▪ Surgical affections of digestive system ▪ Surgical affections of urinary system ▪ Surgical affections of genital system ▪ Surgical affections of the mammary gland	**Special Surgery & Lameness (B):** ▪ Lameness diagnosis ▪ Hoof affections ▪ Claw affections ▪ Forelimb lameness ▪ Hindlimb lameness.
Obstetrics: ▪ Normal pregnancy ▪ Abnormal pregnancy ▪ Normal parturition ▪ Dam and calf aftercare ▪ Dystocia (causes, diagnosis, Treatment) ▪ Puerperium (Normal & Abnormal)	**Artificial Insemination and Embryo Transfer:** ▪ Introduction of Artificial insemination ▪ Methods of semen collection ▪ Semen collection and evaluation ▪ Semen composition and sperm metabolism ▪ Semen diluents and semen preservation ▪ Insemination technique ▪ Embryo transfer protocol in farm animals ▪ Embryo preservation ▪ Embryo transfer and associated biotechnology

Veterinary Infectious Diseases (A):	Veterinary Infectious Diseases (B):
• Infectious diseases of camels: **1-** Infectious Bacterial diseases of cattle and buffaloes 2- Infectious Viral diseases of cattle and buffaloes 3- Infectious Parasitic diseases of cattle and buffaloes 4- Infectious Mycotic diseases of cattle and buffaloes 5- Infectious Rickettsial diseases of cattle and buffaloes 6- Infectious diseases of calves	▪ Infectious Viral diseases of Sheep and goats ▪ Infectious Bacterial diseases of Sheep and goats ▪ Infectious Parasitic diseases of Sheep and goats ▪ Infectious Viral diseases of equine ▪ Infectious Bacterial diseases of equine ▪ Infectious Parasitic diseases of equine ▪ Infectious Mycotic disease of equine ▪ Infectious Viral diseases of dogs and cats ▪ Infectious Bacterial diseases of dogs and cats ▪ Infectious Parasitic diseases of dogs and cats ▪ Infectious Mycotic diseases of dogs and cats
Poultry and Rabbit Diseases (A) ▪ Avian viral diseases ▪ Avian Parasitic diseases. ▪ Mycotoxines and avian Mycotic diseases.	**Poultry and Rabbit Diseases (B)** ▪ Avian Bacterial diseases ▪ Rabbit diseases. ▪ Nutritional diseases ▪ Miscellaneous conditions
Meat Hygiene (A) ▪ Types of abattoirs ▪ Ante mortem inspection ▪ Post mortem examination ▪ Bacterial diseases of food animals ▪ Tuberculosis ▪ Viral diseases of food animal ▪ Methods of animals slaughtering ▪ Abnormal conditions of food animals ▪ Poultry meat hygiene ▪ Parasitic diseases of food animals ▪ Parasitic diseases of food animals	**Meat Hygiene (B)** ▪ Fish meat hygiene ▪ Animal byproducts ▪ Meat preservation ▪ Meat technology ▪ Meat residues ▪ Identification of animal species ▪ Chemical composition of meat ▪ Rigor mortis ▪ Meat analysis ▪ Ostrich meat hygiene
Zoonoses (A) ▪ Introduction to zoonotic diseases ▪ Bacterial zoonotic diseases ▪ Mycotic zoonotic diseases ▪ Chlamydia and Rickettsial diseases	**Zoonoses (B)** ▪ Parasitic zoonotic diseases ▪ Viral zoonotic diseases

7- Program Admission Requirements:

The students could admit to join the veterinary Medical Science Programme if they have one of the following certificates:

1- The National General Secondary School certificate (Science branch) with the grades stated by the central admission office.

2- A certain limited number of students with a Secondary School certificates from the Arab countries could also be enrolled (the percentage differs from year to year and determined by the Ministry of Higher Education).

3- Students with equivalent degrees like American diploma or IGCSF could be enrolled (the percentage differs from year to year and determined by the Ministry of Higher Education).

4- Students could be transferred from one of the equivalent national veterinary faculties to the same year if his condition is at least passed and his/her social and /or health status require this transfer.

8- Regulations for progression and program completion:

The policy of student retention and progression are determined according to the university regulations. Promotion to the next year requires that student passes either without failed courses or with no more than two failed courses. Students transferred with failed courses must enter make-up examination in these courses in proper semester. However, the final year students who have failed in one or two courses will take their make-up exam in the same year. After four successive opportunities for examinations in the failed course(s), the student should become external then if he succeeded he should return to the regular system.

Assessment Method	Assessment Weight	ILOs
1- Written Exam	50 %	For assessment of knowledge and intlucual skills
2- Practical Exam	20 %	For assessment of practical and professional skill.
3- Oral Exam	20 %	For assessment of knowledge and intlucual skills
4- activites	10 %	For assessment of general and transferable skill.
Total	**100%**	

9- Program assessment:

sample	tool	القائم بالتقويم
Students	Quationare	Q.A.U
Alumni	Quationare	Q.A.U
Stakholders	Quationare	Q.A.U

Comparison of previous to external references: See ANNEX 1 Matrix between Program ILOs and NARS

Subject	Range			Sciences characterization
	Faculty	program	NARS	
Basic Sciences	1410	31.75	22-28	Biology, Biophysics, Chemistry, Biostatics, Animal husbandry, Embryology, Histology, Physiology, Anatomy. Biochemistry
Pre-clinical Sciences	885	19.93	17-23	Genetics, Microbiology, Nutrition, Mycology, Immunology, Pharmacology, Parasitology, Virology, Pathology & production.
Clinical Sciences	1985	44.7	40-44	Epidemiology and pathogenesis, Internal medicine and toxicology, Poultry and fish diseases, Hygiene, Surgery, Zoonoses, Theriogenology and Clinical pathology Morbid pathology and treatment of animals & Milk and Meat hygiene.
Computing and ICT	45	1.01	2-4	Computer sciences and application of IT.
Humanities, economics and English	120	2.7	1-3	Human rights and Social studies.
Discretionary subjects	-	-	4-8	Allowed to each faculty to be used based on its mission.

مصفوفة المعارف والمهارات المستهدفة من البرنامج التعليمي(مع المقررات الدراسية):

Achievement of Program Intended Learning Outcomes:

First Year

Course Title	Knowledge and understanding	Intellectual skills	Practical and professional	General transferable skills
Anatomy and Embryology	a4	b1, b3	c1, c2	d2,d3, d6
Cytology and general Histology	a5	b1,b3	c1, c3	d2,d3, d6
General physiology	a6	b1,b3	c1	d1,d3,d5,d6
Organic and Inorganic Chemistry	a1	b1,b19	c4	d2,d5
Biology (Zoology and Botany)	a1	b1,b19	c4	d2,d5
Biophysics	a1	b1,b19	c4	d2,d5
Veterinary Medical Terminology	a1	b1,b19	—	d3
Human rights	a19	b1,b19	—	d3
Special Histology	a5	b1,b3	c1, c3	d2,d3, d6
biochemistry	a6	b1,b6	c1	d1, d2, d3, d6
Veterinery Genetics and Genetic Engineering	a1	b1,b5, b20	c1	d3,d5, d6
Computer	a1	b1,b19	c4	d5, d6
Biostatistics	a1	b1,b2, b19	—	d2,d3, d5, d6

Second Year

Course Title	Knowledge and understanding	Intellectual skills	Practical and professional	General transferable skills
Comparative and applied Anatomy	a4	b1, b3	c1, c2	d2,d3, d6
Special physiology of animal, poultry and fish	a6	b1,b3	c1	d1,d3,d5,d6
biochemistry	a6	b1,b6	c1	d1, d2, d3, d6
Special Histology	a5	b1,b3	c1, c3	d2,d3, d6
Animal, poultry and fish Breeding and production	a2	b1, b14, b20	c13, c16	d2,d3.d4, d6
Animal and poultry behavior and management	a2, a7	b1, b5, b14	c5, c16	d2,d3
Veterinary economy and farm management	a3	b1,b2, b14	c16	d1, d2, d6

Third Year

Course Title	Knowledge and understanding	Intellectual skills	Practical and professional	General transferable skills
General Pathology	a9	b1, b18	c8, c9, c10	d2,d3, d6
General Parasitology	a9	b1, b9	c8, c,9 c10	d1,d2,d3, d6

Course Title	Knowledge and understanding	Intellectual skills	Practical and professional	General transferable skills
Nutrition & Clinical Nutrition	a8	b1,b4	c13, c14	d2, d3, d5,d6
Veterinary Pharmacology	a10	b1,b7	c1, c11, c15	d2, d3, d6
Bacteriology, Mycology and Immunology	a9	b1, b9	c8, c9, c10	d2, d3, d5
Virology	a9	b1, b9	c8, c9, c10	d1, d2, d6

Fourth Year

Course Title	Knowledge and understanding	Intellectual skills	Practical and professional	General transferable skills
Special Pathology and Morbid Anatomy	a9	b1, b18	c1, c8, c10	d2,d3, d6
Internal Medicine	a12, a15	b1, b10, b24	c7, c8, c9, c10	d1,d2,d3,d6
General Surgery, Anaesthesiology and Radiology	a14	b1, b11, b24	c6, c7, c17	d1,d2,d3,d6
Reproduction	a12, a13	b1, b12,b24	c7, c8, c9, c10, c18	d1,d2,d3,d5
Forensic Medicin, Toxicology and Veterinary Regulations	a12	b1, b21	c1, c18	d1,b3, d5,d6

Course Title	Knowledge and understanding	Intellectual skills	Practical and professional	General transferable skills
Milk, Egg and their products Hygiene and , Fat and Oil	a18	b1, b13	c1, c12, c19	d2,d3,d5,d6
Clinical pathology	a15	b1, b6, b8	c1, c8	d1, d2, d3, d5,d6
Fish and Aqua Culture diseases, management	a15	b1, b15, b24	c8, c13, c14	d2,d3,d5, d6

Fifth Year

Course Title	Knowledge and understanding	Intellectual skills	Practical and professional	General transferable skills
Animal, poultry & Environment Hygiene	a16, a17	b1, b14, b16, b22	c16, c20	d1, d3, d6
Internal Medicine	a12, a15	b1, b10, b24	c7, c8, c9, c10	d1,d2,d3,d6
Special Surgery & Lameness	a14	b1, b11, b24	c6, c7	d1,d2,d3,d6
Obstetrics & Artificial Insemination and Embryo Transfer	a12, a13	b1, b12, b24	c7, c8, c9, c10, c18	d1,d2,d3,d5

Course Title	Knowledge and understanding	Intellectual skills	Practical and professional	General transferable skills
Veterinary Infectious Diseases	a11, a12	b15, b17, b24	c7, c9, c10	d1,d2,d3,d6
Poultry and rabbit diseases	a15	b15, b17, b24	c7, c9, c10	d1,d2,d3,d6
Meat hygiene	a18	b1, b13	c1, c12, c19	d1,d2,d3, d5
Zoonoses	a17	b23	c19, c20	d2, d3, d5,d6

Program coordinator

Prof. Dr. Shawky Abdelhady

Dean of the Faculty

Assistant coordinator

Prof. Dr. Ismail Ismail El Kon

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