Program Specifications

Faculty of Veterinary Medicine

Benha University

2010-2011
(Version 2)
(After internal and external revision)

Program Specifications (2010- 2011)

Benha University **Faculty of Veterinary Medicine**

A- Basic Information

1- Program Title: **Bachelor Degree in Veterinary Medical Sciences (BVSc)**.
2- Program Type: **Single.**
3- Faculty: **Faculty of Veterinary Medicine (Benha University).**
4- Departments:

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

5- Coordinator:

Prof. Dr. Gamal Abdel-Raheem Sosa
Dean

6- Assistant coordinator:

Prof. Dr. Mohamed El-Sayed Sobhy Abou-Salem,
Vice dean of student affairs.

7- External evaluator: Prof. Dr. Hany Gohar (professor of animal surgery, Cairo University.)

8- Last date of program approval: June, 2009. (Approved after revision on January 2011)

B- Professional Information

1- Program aims:

The aim of the program is to 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 and to gain the required knowledge and skills to be efficient and productive members in the field of veterinary medicine with enhancing the ability for self and continued learning via future outstanding scientific research.

2- Career opportunities

Veterinary graduates have a wide range of governmental and nongovernmental career opportunities as:

1. General Authority for Veterinary Services performing governmental and nongovernmental services at different disciplines.
2. Veterinary hospitals, and animal, poultry and fish farms.
3. Animal and poultry abattoirs.
4. Industries for preparing meat and milk byproducts.
5. Pharmaceutical companies for veterinary drug manufacture and their marketing centers.
6. Food hygiene and control in human hospitals, hotels and air port companies.
7. Veterinary Research Institutes and Veterinary Sections in the National Research Center, Desert Research Institute and, and Army.
8. Veterinary diagnostic laboratories.
9. Zoo and laboratory animal's facilities.
10. Academic staff members at the veterinary faculties.
11. Advisory and consultancy services in veterinary medicine.

3: Graduate attributes

The graduates must have the ability to:

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.
2. Commit to continuous enhancement coping with the most effective efficient recent performance standards of the veterinary Profession, soliciting to community confidence.
3. Apply research concept and technologies in different fields of veterinary sciences.
4. Express proper evaluation capacity and uncover curiosity.
5. Consider life-long learning skills.
6. Apply international ethical and legal frame of medical practice-code
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- Intended Learning Outcomes (ILO's):

The program provides the opportunity for the students to gain the necessary knowledge and understanding of veterinary basic and medical sciences and the professional, practical and intellectual skills necessary for diagnosis, differential diagnosis and solving the common problems in the veterinary medicine field based upon the needs of the surrounding community. Moreover, the program enhances the general transferable skills via student-group interaction and use of information technology in education

A: Knowledge and understanding:

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

a1- Describe the basic sciences of biology, chemistry, biophysics, genetics, biostatics, computer science and Veterinary Terminology.

a2- Recognize the basics of normal behavior, management, breeding, veterinary economics and health maintenance of domestic animals, laboratory animals, poultry, and fish.

a3- Illustrate the normal macro, and microstructure of body tissues, organs and systems of animals, birds and fish.

a4- Understand physiological and biochemical bases of different organs functions, metabolic processes and homeostasis.

a5- Familiarize the principle of welfare, production and health maintenance of food producing and pet animals, sporting animals, wildlife, poultry and fish.

a6- Summarize the basics of nutrition and feeding strategies of healthy and diseased animals.

a7- Describe various causes of animal diseases, their pathogenesis, macro- and microscopic pathological lesions, and laboratory diagnosis.

a8- Familiarize the veterinary medications, uses, marketing, the impact of drug residues on human health and quality control of pharmaceutical practices.

a9- Comprehend the general and specific epidemiological pattern of animal population diseases and the most effective immunization protocols.

a10- Realize the toxicology and Forensic medicine, Animal medicine, Theriogenology and Veterinary surgery

a11- Understand the most appropriate diagnosis and differential diagnosis of animals, poultry and fish diseases.

a12- Know the accurate measurements of veterinary quarantine.

a13- Recognize the public health importance including food hygiene of animal origin and zoonotic diseases that are transmitted from animals to human.

a14- Realize the basics of laws and ethical codes relevant to animals and food hygiene.

a15- Summarize the basics of social sciences, communication, human rights.

B. Intellectual skills:

<u>After successful progression of the program, students will be able to:</u>

b1) Compare between different anatomical and histological structures in different domestic animals, birds and fish.

b2) Relate the type and composition of ration to the types of production, species and age of animal

b3) Deal with behavioral and genetic disorders of farm animals

b4) Correlate the clinical signs of the diseases with the biochemical changes in the body.

b5) Choose the suitable drug, calculate the therapeutic dose and plan a treatment regimen.

b6) Interpret laboratory results for different samples of normal and diseased animal to reach accurate diagnosis.

b7) Differentiate between different infectious, medicinal and zoonotic diseases.

b8) Choose the suitable anesthetic protocol and the relevant surgical intervention for diseased animal.

b9) Choose the ideal interference for correction and treatment of infertility problems in farm animals together with choosing the ideal obstetrical maneuvers.

b10) Interpret the quality of meat, egg, milk and their products and their fitness for consumption.

b11) Choose the most appropriate method to manage commercial animal, poultry and fish farms and select the relevant biosecurity measures for prevention and control of infectious diseases.

b12) Decide on the most suitable vaccination program for different farm animals, pet animals and poultry.

b13) Interpret different environmental pollutants and suggest measures for their control.

b14) Adapt programs of hazard analysis and critical control points (HACCP) on meat, poultry, fish and dairy processing plants.

b15) Interpret the different pathological lesions and predict their sequallae and prognosis.

B16) Utilize the information acquired in the basic sciences for development of career.

III. C. Practical and professional skills:

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

c1- Employ all the gained knowledge and understanding in clinical practice in a skillful pattern.

c2- Practice safely; correctly and humanely restrain animals for examination.

c3- Obtain the history of the case whether it is of an individual animal or a group of animals.

c4- Perform clinical examination of healthy and diseased animal and collect relevant samples.

c5- Manage the findings the common clinical and laboratory diagnostic procedures to reach and adopt the most convenient therapeutic and managemental approach.

c6- Write a report about hygiene and safety of food of animal origin for human consumption.

c7- Implement and advice about animal and fish management, nutrition under conditions of health and disease, and reproductive efficiency.

c8- Gain skillfully and appropriately use new information and remain current with the emerging biomedical knowledge and therapeutic options.

c9- Conduct evidence-based problems solving of field–presented problems tasks.

c10- Manage emergency care to all species of animals.

c11- Use appropriate safety procedures to protect clients and co-workers.

c12-Manage procedures related to food hygiene, public health issues, notifiable diseases and disposal of animal wastes.

c13- Control the risk of contamination, cross infection and predisposing factors for diseases.

III. D: General and transferable skills:

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

d1- Work under pressure and / or contradictory conditions.

d2- Function in a multidisciplinary team.

d3-Communicate appropriately verbally and non-verbally.

d4-Organize and control tasks and resources.

d5- Search for new information and technology as well as adopting life–long self learning ethics.

d6-Utilize computer and internet skills.

Academic Standards:

The National Academic References Standards (NARS) for the veterinary sector of higher education in Egypt (Appendix 1) issued by the National authority for Quality Assurance and Acreditation (NAQAAE) (2009) approved by the faculty council on 13-9-2009.

Teaching and Learning:

The programme features a variety of teaching approaches for different intended learning objectives, including lectures, practical sessions, field visits and seminars.

Assessments:

The programme depends on different measures for assessment according to the nature of courses, but written exams, practical assessment and oral exam are the main measures for assessment, in addition to the seminars, projects and quizzes.

4- Curriculum Structure and Contents:

Duration of the programme: 5 years.

Programme Structure:

Number of hours per year:

1st year:	Lectures: 450	Practical 570	Total 1020
2nd year	Lectures: 540	Practical 630	Total 1170
3rd year	Lectures: 495	Practical 630	Total 1125
4th year	Lectures: 480	Practical 630	Total 1110
5th year	Lectures: 540	Practical 750	Total 1290

Summer Training:

3rd year:	Lectures -------- Practical	384 h.	Total 384 h.
4th year:	Lectures -------- Practical	384 h.	Total 384 h.
5th year:	Lectures -------- Practical	384 h.	Total 384 h.

- **Percentage of courses forming the different components of the academic structure of the programme:**

  ❖ Basic sciences — 4 external courses in the first year (2 courses in 1st

term + 2 courses in 2nd term) 390 hrs, 5.68%

- ❖ Basic veterinary sciences — 35 veterinary courses (in the first, second and third years) 2865 hrs, 41.72%
- ❖ Clinical veterinary sciences — 31 courses (in the fourth and fifth years) 2400 hrs, 34.95%
- ❖ Human rights — 1 course (in the third year/2nd term) 30 hrs, 0.44%
- ❖ Computer sciences — Replaced by the ICDL on academic year 2008
- ❖ Language courses — 1 English course (in the first year/ 1st term) 30 hrs 0.43%

5- Programme Courses Matrix:

FIRST YEAR

Course Title	Curriculum (number of hours)				Type of exam.	Full marks	Exam's time (hours)	ILOs covered (By No.)
	Lecture/ week	Lab/ week	Total/ week	Total/ semester				
A- First Semester								
Biophysics	4	2	6	90	Written& practical	100	3	a^5 , $d^{1,6}$
Organic and physical chemistry	4	4	8	120	Written& practical	100	3	a^5, $d^{1,6}$
Histology (1)	1	3	4	60	Written, practical & oral	100	3	a^2, b^1 $d^{1,6}$
General physiology (1)	2	3	5	75	Written, Practical. and oral	100	3	a^3 c^4 d^1
Anatomy and Embryology (general)	2	4	6	90	Written, practical & oral	100	3	a^3, b^1 d^1
General biochemistry (1)	2	3	5	75	Written, Practical& oral	100	3	a^4, b^4 c^4 d^1
English language	1	1	2	30	Written & Practical	50	3	a^5, $d^{1,3,5,6}$
Total	16	20	36	540		650	21	

B- Second Semester

Biology					Written			

(Botany & Zoology)	4	4	8	120	& Practical.	100	3	a^{5}, $d^{1,6}$
Biostatistics	2	-	2	30	Written	50	2	A^{5}, $d^{1,6}$
Histology (1)	1	3	4	60	Written, Practical. and oral	100	3	a^{1}, b^{1}, $d^{1,6}$
General physiology	2	3	5	75	Written, Practical. and oral	100	3	a^{3}, c^{4} $d^{1,6}$
Anatomy of animal and birds	2	4	6	90	Written, Practical. and oral	100	3	a^{3}, $b^{1,}$, $d^{1,6}$
General biochemistry	2	3	5	75	Written, Practical. and oral	100	3	a^{4}, b^{4} c^{4} $d^{1,6}$
Computer science	1	1	2	30	Written & Practical.	50	2	A^{5}, $d^{1,6}$
Total	14	18	32	480		600	19	

SECOND YEAR

Course Title	**Curriculum (number of hours)**				**Type of exam.**	**Full marks**	**Exam's time (hours)**	**ILOs covered**
	Lecture/ week	Lab/ week	Total/ week	Total/ semester				
A- First Semester								
Histology (2)	2	3	5	75	Written, Practical. and oral	100	3	a^{1}, b^{1}, c^{9} $d^{1,2}$
Anatomy and Embryology(2)	3	4	7	105	Written, Practical. and oral	100	3	a^{4},b^{1} $d^{1,2}$
Animal physiology (2)	3	3	6	90	Written, Practical. and oral	100	3	a^{3}, c^{4} $d^{1,2}$
Clinical biochemistry	2	3	5	75	Written, Practical. and oral	100	3	a^{6},b^{4}, c^{4} $d^{1,2}$
Animal and poultry behavior and management	3	3	6	90	Written, Practical. and oral	100	3	a^{6}, b^{3}, c^{1} $d^{1,2}$
Animal and poultry feeding and malnutrition diseases	3	3	6	90	Written, Practical. and oral	100	3	a^{7} , b^{3}, c^{6} $d^{1,2,4,6}$
Genetics	2	2	4	60	Written & Practical.	100	3	a5,9 , $d^{1,6}$
Total	18	21	39	585		700	21	

B-Second Semester

Histology (2)	2	3	5	75	Written, Practical. and oral	100	3	a^{1},b^{1}, c^{9} $d^{1,6}$
Anatomy and embryology (2)	3	4	7	105	Written, Practical. and oral	100	2	$a^{4.5}$, b^{1} $d^{1,2}$
Animal physiology (4)	3	3	6	90	Written, Practical. and oral	100	3	a^{3}, c^{4} $d^{1,6}$
Clinical biochemistry	2	3	5	75	Written, Practical. and oral	100	3	a^{6}, b^{4}, c^{4} $d^{1,6}$
Animal and poultry behavior and management	3	3	6	90	Written, Practical. and oral	100	3	a^{9}, b^{3}, $c^{1,}$ $d^{1,6}$
Animal and poultry feeding and malnutrition diseases	3	3	6	90	Written, Practical. and oral	100	3	a^{7}, b^{3}, c^{6} $d^{1,4}$
Genetics	2	2	4	60	Written & Practical.	100	3	$a^{5,9}$, $d^{1,6}$
Total	18	21	39	585		700	21	

THIRD YEAR

Course Title	**Curriculum (number of hours)**				**Type of exam.**	**Full marks**	**Exam's time (hours)**	**ILOs covered**
	Lecture/ week	Lab/ week	Total/ week	Total/ semester				
A- First Semester								
Pharmacology	3	3	6	90	Written, Practical.& oral	100	3	a^{10}, b^{5}, c^{3} $d^{1,6}$
Bacteriology, Immunology and mycology	2	2	4	60	Written, Practical. and oral	100	3	$a^{11,12}$, c^{3} $d^{1,6}$
Virology	1	3	4	60	Written, Practical. and oral	100	3	a^{11}, c^{3} d^{1}
Parasitology	3	3	6	90	Written, Practical. and oral	100	3	a^{13}, c^{3} d^{1}
Milk hygiene	3	3	6	90	Written, Practical. and oral	100	3	a^{14}, b^{10}, c^{5} d^{1}
Pathology	2	5	7	105	Written, Practical. and oral	100	3	a^{20}, b^{15} c^{3} d^{1}
Animal and poultry production	3	2	5	75	Written & Practical.	100	3	a^{8} d^{1}
Total	17	21	38	570		700	21	

B- Second Semester

					Written,			a^{10}, b^{5} , c^{3}

Pharmacology	3	3	6	90	Practical. and oral	100	3	$d^{1,6}$
Bacteriology, immunology and mycology	2	4	6	90	Written, Practical. and oral	100	3	$a^{11,12}$, c^{3} $d^{1,6}$
Virology	1	3	4	60	Written, Practical. and oral	100	3	a^{11}, c^{3} $d^{1,6}$
Parasitology	3	3	6	90	Written, Practical. and oral	100	3	a^{13}, c^{3} $d^{1,6}$
Milk hygiene and Technology	3	3	6	90	Written, Practical. and oral	100	3	a^{14}, b^{10}, c^{5} $d^{1,6}$
Pathology	2	5	7	105	Written, Practical. & oral	100	3	a^{14}, $b^{15}c^{3}$ $d^{1,6}$
Human rights	2	-	2	30	Written	50	2	a^{5}, d^{6}
Total	16	21	37	555		650	20	

FOURTH YEAR

Course Title	Curriculum (number of hours)				Type of exam.	Full marks	Exam's time (hours)	ILOs covered
	Lecture/ week	Lab/ week	Total/ week	Total/ semester				
A- First Semester								
Surgery (1)	2	3	5	75	Written, Practical. and oral	100	3	a^{12}, b^{8}, c^{6} $d^{1,2,3,5}$
Medicine (1)	2	3	5	75	Written, Practical. and oral	100	3	a^{12}, b^{7}, $c^{2,6}$ $d^{1,2,3,5}$
Theriogenology (1)	2	3	5	75	Written, Practical. and oral	100	3	a^{14}, b^{9}, c^{6} $d^{1,2,3,5}$
Meat, poultry and fish hygiene and control (1)	3	5	8	120	Written, Practical. and oral	100	3	a^{14}, b^{10}, c^{5} $d^{1,2,3,5}$
Forensic medicine and toxicology (1)	2	3	5	75	Written, Practical. and oral	100	3	a^{11} $b^{13,18,}$ ^{C3} $d^{1,3,5}$
Pathology (2)	2	2	4	60	Written, Practical. and oral	100	3	a^{20}, b^{15}, c^{9} $d^{1,2,3,5}$
Clinical pathology (1)	1	3	4	60	Written, Practical. and oral	100	3	$a^{15, 20}$, b^{6}, c^{4} $d^{1,2,3,5}$
Economic of animal and poultry production	4	-	4	60	Written	100	3	$a^{10,}$ b^{11} $d^{1,2,3,5}$
Total	18	22	40	600		800	24	

B- Second Semester

Surgery (1)	2	3	5	75	Written, Practical. and oral	100	3	a^{17}, b^{8}, $c^{2,6}$ $d^{1,2,3}$
Medicine (1)	2	3	5	75	Written, Practical. and oral	100	3	a^{18}, b^{7}, $c^{2,6}$ $d^{1,2,3}$
Theriogenology (1)	2	3	5	75	Written, Practical. and oral	100	3	a^{19}, b^{9}, $c^{2,6}$ $d^{1,2,3}$
Infectious diseases (1)	3	4	7	105	Written, Practical. and oral	100	3	$a^{18,23}$, $b^{7,12}$, c^{3} $d^{1,}$
Zoonotic diseases (1)	2	2	4	60	Written, Practical. and oral	100	3	$a^{22,23}$, b^{7}, c^{5} $d^{1,2,3,7,8}$
Pathology (2)	2	2	4	60	Written, Practical. and oral	100	3	a^{20}, b^{15}, c^{3}, $d^{1,2}$
Clinical pathology (1)	1	3	4	60	Written, Practical. and oral	100	3	$a^{15,20}$, b^{6}, c^{4} $d^{1,2}$
Total	14	20	34	510		700	21	

FIFTH YEAR

Course Title	**Curriculum (Number of hours)**				**Type of exam.**	**Full marks**	**Exam's time (hours)**	**ILOs Covered**
	Lecture/ week	Practical/ week	Total/ week	Total/ semester				
A- First Semester								
Surgery (2)	2	3	5	75	Written, Practical. & oral	100	3	a^{17}, b^{8}, $c^{2,6}$, $d^{1,2,3}$
Medicine (2)	2	3	5	75	Written, Practical. & oral	100	3	a^{18}, b^{7}, $c^{2,6}$ $d^{1,2,3}$
Theriogenology (2)	2	3	5	75	Written, Practical. & oral	100	3	a^{19}, b^{9}, $c^{2,6}$ $d^{1,2,3}$
Poultry and rabbit diseases	3	3	6	90	Written, Practical. & oral	100	3	$a^{16,18}$, $b^{9,12}$ $c^{2,6}d^{1,2,3}$
Animal, poultry & Environmental Hygiene	3	4	7	105	Written, Practical. and oral	100	3	a^{8}, $b^{11,13}$, c5 $d^{1,4,6,8}$
Infectious Diseases (2)	3	4	7	105	Written, Practical. and oral	100	3	$a^{18,23}$, $b^{7,12}$ c3 $d^{1,2,3}$
Zoonotic Diseases (2)	2	2	4	60	Written, Practical. and oral	100	3	$a^{22,23}$, b^{7} c^{3} $d^{1,2,3,7,8}$
Fish Diseases and Management	1	2	3	45	Written, Practical. and oral	50	2	a^{24}, $b^{9,21}$ c^{5} $d^{1,2,3}$
Total	18	24	42	630		750	23	
B- Second Semester								
Surgery (2)	2	3	5	75	Written, Practical	100	3	a^{17}, b^{8}, c^{6} $d^{1,2,3}$

					& oral			
Medicine (2)	2	3	5	75	Written, Practical & oral	100	3	a^{18}, b^{7}, c^{6} $d^{1,2,3}$
Theriogenology (2)	2	3	5	75	Written, Practical & oral	100	3	a^{19}, b^{9}, c^{6} $d^{1,2,3}$
Poultry & Rabbit diseases (2)	3	3	6	90	Written, Practical & oral	100	3	$a^{16,18}$, b^{12} $c^{2,6}d^{1,2,3}$
Animal, poultry & Environmental Hygiene	3	4	7	105	Written, Practical & oral	100	3	$a^{8,16}$, $b^{11,13}$, c^{5} $d^{1,2,3}$
Meat, poultry and fish hygiene and their product and animal byproduct (2)	3	5	8	120	Written, Practical & oral	100	3	a^{14}, $b^{10,14}$ $d^{1,2,3}$
Forensic Medicine and toxicology (2)	2	3	5	75	Written, Practical & oral	100	3	a^{21}, $b^{17,18}$ c^{3} $d^{1,2,3,7,8}$
Fish diseases & management	1	2	3	45	Written, Practical. & oral	50	2	a^{24}, b^{11} $c^{5}d^{1,2,3}$
Total	18	26	44	660		750	23	

Summer Training:

According to a definite syllabus, the students have to spend a period of six months for training in terms of 6 hours/ day. The training is divided into three main parts each part consists of eight weeks in the summer between the third and fourth years, fourth and fifth years and after the end of the fifth year 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.

6- Programmeme 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.

7- Regulations for progression and programme 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.

Program coordinator

Prof. Dr. Gamal Abdel Raheem Sosa

Dean,

Date: 12 /1/2011